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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/709,454	11/13/2000	Masaki Matsui	1-99	4344

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EXAMINER
SHAKERI, HADI

ART UNIT	PAPER NUMBER
3723	

DATE MAILED: 11/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/709,454	Applicant(s) MATSUI, MASAKI	
	Examiner Hadi Shakeri	Art Unit 3723	

-- The MAILING DATE of this communication appears on th cov r sh et with th correspond nc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *44,47-65 and 67-71* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *44,47-65 and 67-71* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 November 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/30/02 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 44, 47-56, 58-62, 64, and 67-69 are rejected under 35 U.S.C. 102(e) as being anticipated by Towery et al., US Patent No. 6,270,395.

Towery et al. discloses all the limitations of claim 44, i.e., a method of Chemical Mechanical Polishing (CMP) of a silicon semiconductor wafer using an oxidizing slurry comprising chromium oxide, col. 12, lines 40-44 and an oxidizing agent, e.g., hydrogen

peroxide, col. 9, lines 30-38, on a polishing cloth, polyurethane pad (16) meeting all the steps the step of increasing oxygen concentration by performing the polishing in the presence of the oxidizing agent, hydrogen peroxide.

Regarding claim 47, PA as applied above meets the limitations, oxidizing slurries comprising manganese dioxide, col. 9. line 28.

Regarding claims 48-56, 58-62, 64, and 67-69, PA as applied above meets the limitations.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 57, 63, and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Towery et al. in view of Satake et al., US Patent No. 6,012,967.

Towery et al. as applied above meets all the limitations of the above claims except for a heating means, e.g., a light source to irradiate the oxidizing agent. It is known in the art as evident by Satake et al. to use a light source for heating or irradiating in a chemical mechanical polishing. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the method and apparatus of Towery et al. by using a light source for heating or irradiating as taught by Satake et al. for more uniform polishing removal rate.

6. Claims 70 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Towery et al. in view of Applicants Admitted Prior Art (AAPA).

Towery et al. as applied above meets all the limitations of the above claims except for a pre-polishing step utilizing superfine diamond grains. As admitted by the Applicant, pages 2 and 3, it is kwon in the art to use superfine abrasive grains followed by another process to remove scratches. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to further modify the modified invention of Towery et al. by preparing the workpiece (rough polishing), utilizing superfine diamond abrasive prior to fine polishing as it is commonly practice in the art depending on the workpiece and operation parameters, e.g., desired result, time...

Regarding the use of the specified size, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use diamond grain size finer than #8000, depending on the workpiece parameters, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin,* 125 USPQ 416.

Response to Arguments

7. Applicant's arguments, regarding claims 44, 47-56, 58-62, 64 and 67-69 filed 10/16/02, with the filing of RCE, have been fully considered but are moot in view of new grounds of rejections.

Conclusion

8. Prior art made of record and not relied upon are considered pertinent to applicant's disclosure. Murphy et al. and Torii are cited to show related inventions.

9. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Hadi Shakeri at (703) 308-6279, FAX (703) 746-3279 for unofficial documents. The examiner can normally be reached on Monday-Thursday, 7:30 AM to 6:00 PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist at (703) 308-1148.

EILEEN P. MORGAN
PRIMARY EXAMINER

HS

October 29, 2002